



XM[®] Linear Seam Welders

AMET's Linear Seam Welders are designed as a complete solution for performing linear welds. Typically these parts are cylindrical, but other shapes can be accommodated. Each is equipped with our world-class controls and servo motor driven motion axes for precise control and consistent performance.

These seam welders are designed to provide ease of use, quality, robustness, high-precision, and repeatability. The main structure and base are constructed of heavy-wall structural steel to maintain rigidity and extend service life.

AMET[®] seam welders can be configured for virtually any weld process including: GTAW, PAW, VPGTAW, VPPAW, GMAW, and FCAW and can also be designed with multi-process weld heads.

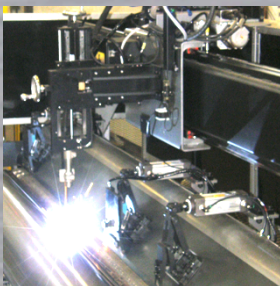
Benefits

AMET[®] Uses High Quality Components

- MA** Precision bearings and rails provide smooth carriage motion resulting in consistent welds with an even bead.
- MA** Precision controls, +/- 1% of set speed, helps ensure repeatable weld head motion for dependable performance. This is especially beneficial for high volume part runs.
- MA** The travel carriage beam is stress relieved to maximize durability, increase rigidity, and provide consistent performance.
- MA** AMET[®] uses hi-flex cabling and a flexible cable carrier to protect the cables and increase the lifespan.
- MA** Double wall pneumatic hose provides uniform clamping along the length of the weld bed, virtually eliminating the need for pre-tacking parts prior to loading them into the seam welder. This reduces material, labor, and consumables costs.



End Use Examples



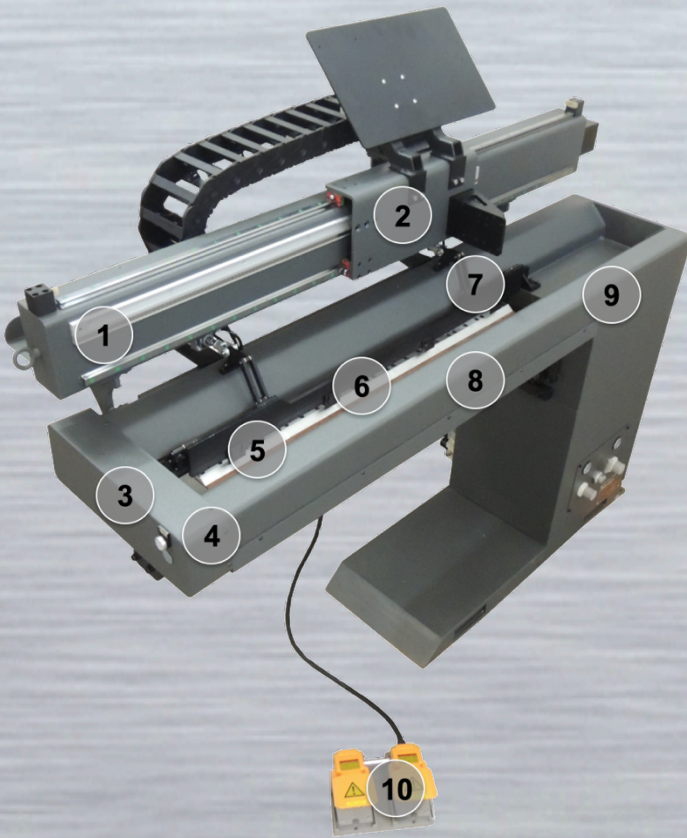
Flat Sheet/Panel Welding
Steel Hose Manufacturing
Agricultural Machinery
Jet Engine Components
Over-The-Road Trailer Tankers
Construction Products

Fuel Tanks
Storage Tanks
Air Cylinders
HVAC Components
Pressure Vessels
Hot Water Tanks





Standard Features



1. A travel carriage rides on four (4) precision linear rail bearing blocks and is driven by either a sealed ballscrew drive for weld lengths up to 2000mm or a rack and pinion drive for weld lengths above 2000mm. Home and travel limit switches are included, further enabling precise and repeatable welds. A cable carrier is also included, providing a neat cabling package and extending the life of the cabling and hoses.

2. The travel carriage beam is stress relieved prior to machining, which maintains tight tolerances and dimensional stability over the life of the equipment.

3. A safety interlock is provided at the mandrel latch. The switch prevents clamping when the mandrel is open and prevents unclamping while a weld is in progress.

4. Double-wall hose provides uniform pneumatic clamping force to each of the clamping fingers. Clamping pressure is adjustable for various material thicknesses.

5. The copper fingertips provide excellent conduction and aid in chilling the weld zone.

6. The finger-to-finger distance between the front and back clamping fingers may be adjusted, thus allowing the fixture to be fine-tuned to the welding process and materials being welded. The finger-to-finger adjustment is located on top of each clamping finger providing easier adjustment than traditional seam welders. The fingers are mounted to a machined plate and include a precision pivoted gearing that provides axial pivoting of the fingers to compensate for misalignment, resulting in more consistent welds.

7. Two (2) manually retractable part alignment devices facilitate positioning the weld joint along the centerline of the seam welder prior to clamping and welding. Each device can be repositioned along the length of the seam welder.

8. The adjustable height mandrel accommodates materials of various thicknesses and is plumbed to accept water-cooling to help draw heat out of the weld joint.

9. AMET® Seam Welders utilize heavy-duty, thick wall structural steel construction to minimize part distortion during clamping and provide superior heat absorption and dissipation during the welding process. The heavy construction increases the rigidity and extends the equipment's service life.

10. Foot switches are used for activating the front and rear finger clamping.

Optional Features

-  Automatic Finger Release
-  Gas Back-up Insert
-  Auto Gas Purge with Gas Backup Insert
-  Pneumatic Centering Devices
-  Pneumatic Mandrel Latch

-  Dual Pressure Clamping
-  Part Loading Carts
-  Removable Riser – Increase diameter capacity up to 72 inches
-  Continuous Clamping Strips



Capacities

The seam welders have the following capacities:

- WA** Weld Length: 500 to 6000mm (19.6 to 236.2 in) with an additional 125 mm (4.9 in) travel length for run-on and run-off tabs. Weld lengths are in increments of 250mm (9.8 in) up to 2000mm and then every 500mm (19.6 in) up to 6000mm.
- WA** Minimum Diameter Capacity: 75 to 625 mm (2.95 to 24.60 in) ID depending on the length of the seam welder selected.
- WA** Maximum Diameter Capacity: 915 mm (36.0 in) standard OD capacity, additional capacity is available.
- WA** Carriage Speed: 50 to 4000 mm/min (1.9 to 157.4 in/min) with rack and pinion gear drive.
- WA** Travel Accuracy: +/- 0.15 mm per 3 meters (.005 inches per 9.8 feet).
- WA** Wall Thickness: The mandrel height is adjustable for sheet thicknesses of 0.5 to 10.0 mm (.02 to .39 in).
- WA** Pneumatic Clamping Force: Adjustable up to 65 kg/cm (4367 lb/ft) at 6.9 bars (100 PSI) air input.
- WA** Carriage Weight Capacity: 150 kg (330 lbs.) at a distance of 300 mm (11.8 in) from carriage faceplate.

AMET® Seam Welder Solution Examples



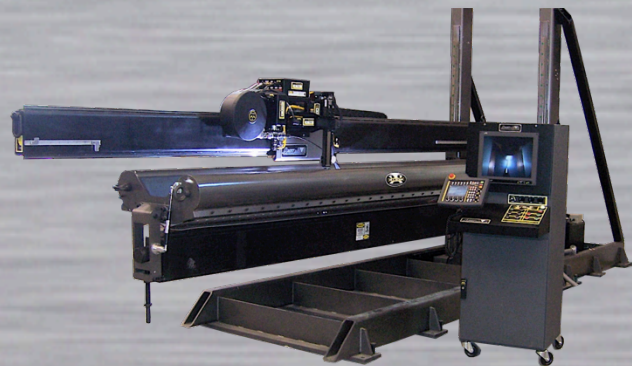
Micro GTA Seam Welder for metal seal manufacturing used in jet engines.



Combination Internal/External dual wire GMAW seam welder for-over-the-road trailer tanker manufacturing.



Fully automated GMAW seam welder for heavy agricultural machinery manufacturing



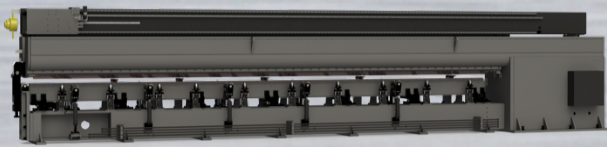
Elevating plasma seam welder for stainless steel tank and vessel manufacturing.



LSWI – Internal Seam Welder

The internal seam welder is designed to weld flat sheet and larger tanks and vessels from the inside with the cylinder wrapping around the track and tabletop assemblies. These seam welders are typically used on flat sheet conveyor lines for easier sheet loading.

The table top construction is tilted inward forming a “V” shape and the distance between the track and the table is reduced to provide the smallest envelope possible. The base and mandrel are an integrated unit for increased rigidity and clamping capability.



LSWFS – Flat Sheet Seam Welder

The flat sheet seam welder is specifically designed for making flat sheet welds, typically in panel welding lines. It uses a standard table top, which is more open and easier for the operator to observe the welding process, but with the base of an internal seam welder.

LSWC – Combination Seam Welder

The Combination Seam Welder is a multi-function system that combines both internal and external welding capabilities. The seam welder can perform external welds on smaller diameter parts and internal welds on larger diameter parts for a more versatile seam welding solution. Large diameter parts with heavy wall thicknesses may require

additional supporting equipment such as an overhead crane.

The combination seam welder utilizes a separate



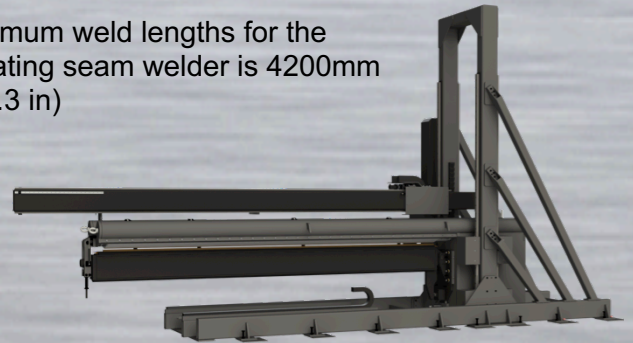
mandrel and base assembly like the standard seam welder but with a tabletop like the internal seam welder. This allows for internal welds to be performed on smaller diameter parts than the standard external welder would be able to achieve.

LSWE – Elevating Seam Welder

On this seam welder, the track, table top, and mandrel assemblies of an LSW are attached to a large hydraulic cylinder. The entire structure with clamping and welding capabilities can be raised to increase the maximum part diameter from 915 mm (36 in) to 2400 (96 in). This allows for external welding of a greater range of parts than the standard external seam welders.

These seam welders are ideally suited for “job shops” that manufacture a large range of vessels, tubing, and tanks. They provide a much wider range of part diameter capabilities while still providing the same level of high quality and repeatable welds of the standard seam welder.

Maximum weld lengths for the elevating seam welder is 4200mm (165.3 in)



Precision Benchtop Seam Welder

The precision benchtop seam welder includes a ball screw drive for precise movement with minimal backlash. They are built using a smaller frame and carriage, so the maximum material capacity is reduced to 4.0 mm (0.157 in). Weld lengths range from 75 to 900 mm (2.9 to 35.4 in). Other versions of seam welders are available in precision configurations with ball screw drives.

